

REMARKS

Claims 7, 8, and 10-28 are pending. Claims 7, 8, and 10-28 have been amended. Claim 9 has been cancelled. Claims 29-32 have been added. Applicants reserve the right to pursue the original and other claims in this and any other application.

Claims 7-28 stand rejected under 35 U.S.C. 102(e) as being anticipated by Sorokin et al. (U.S. Patent 6,522,325) (“Sorokin”). The rejection is respectfully traversed.

Claim 7 recites “a method for virtually navigating an environment in three dimensions” comprising, *inter alia*, “defining virtual paths in the environment … generating a plurality of synthetic images corresponding to viewpoints along the virtual paths … wherein … at least one of the synthetic images has a perspective different than any of the plurality of cameras.”

Sorokin discloses an array of many closely-spaced cameras. (Col. 5, Lines 1-20 and FIG. 7a, Element 10) Users “navigate through the array” by sequentially selecting adjacent camera images for display. (Col. 6, Lines 24-29 and 39-43) “[T]echniques for mixing images of cameras along each path, such as, mosaicing and tweening” can be used to “effectuat[e] seamless motion along such paths.” Sorokin contemplates that the cameras have a “zoom capability” but concedes “simply zooming towards on object does not change the user’s image point perspective.” (Col. 18, Lines 61-64) To provide a changed perspective in the forward or backward” direction (i.e., perpendicular to the array), Sorokin discloses a plurality of concentric camera arrays. (FIG. 11) Thus, every image displayed by Sorokin is from the perspective of a camera. Images from adjacent cameras may be combined by “mosaicing and tweening” to provide a smoother transition, but the images themselves are still from the perspective of their respective cameras.

Applicant, by contrast, claims a method wherein “at least one of the synthetic images has a perspective different than any of the plurality of cameras.” Sorokin, in fact, teaches away from this limitation by indicating a change in perspective can only be accomplished by employing additional camera arrays. This limitation is supported by at least Applicant’s FIG. 2, which

illustrates “synthetic viewpoints” 13 and 15, both having a perspective different than any of the cameras 7, 8, and 9. According to Sorokin, displaying an image from the perspective of viewpoint 13 or 15 would require additional cameras at those locations, as illustrated in Sorokin’s FIG. 11.

During the January 31, 2008 meeting with Applicants’ representatives, the Examiner asked whether claim amendments similar to those now submitted are enabled by the specification. “The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.” MPEP § 2164.01 (quoting *United States v. Teletronics, Inc.*, 857 F.2d 778, 785 (Fed. Cir. 1988)) (emphasis added). “A patent need not teach, and preferably omits, what is well known in the art.” *Id.* (citing *In re Buchner*, 929 F.2d 660, 661 (Fed. Cir. 1991)) (emphasis added). Methods for generating synthetic images were known in the art at the time of Applicants’ invention. See, for example, the references cited in the Information Disclosure Statement submitted herewith. These references do not teach or suggest Applicant’s claimed invention, however, because Applicant does not claim all methods for generating synthetic images, but rather a method for efficiently providing a virtual telepresence by constraining viewpoints from which synthetic images are generated to “virtual paths” through a space.

Claims 8, 10-12 and 29 depend from claim 7 and are allowable over Sorokin along with claim 7 for at least the reasons stated above with respect to claim 7 and on their own merits. Therefore, the rejection of claims 8 and 10-12 should be withdrawn and claims 8, 10-12 and 29 should be allowed.

Claim 20 recites a limitation similar to that quoted above with respect to claim 7 and is allowable over Sorokin for at least the reasons stated above with respect to claim 7 and on its own merits. Therefore, the rejection of claim 20 should be withdrawn and the claim allowed.

Claims 21-28 and 32 depend from claim 20 and are allowable over Sorokin along with claim 20 for at least the reasons stated above with respect to claim 20 and on their own merits. Therefore, the rejection of claim 21-28 should be withdrawn and claims 21-28 and 32 should be allowed.

Claims 13 recites “a method for efficiently providing a virtual presence within a three-dimensional scene to a plurality of simultaneous users” comprising, *inter alia*, “defining a plurality of virtual paths within the scene ... defining a plurality of viewpoints along each virtual path; capturing images of the scene from a plurality of cameras; generating a synthetic image corresponding to each viewpoint ... wherein at least one of the synthetic images has an optical axis different than any of the plurality of cameras.”

As indicated above, Sorokin discloses an array of many closely-spaced cameras. (Col. 5, Lines 1-20 and FIG. 7a, Element 10) Users “navigate through the array” by sequentially selecting adjacent camera images for display. (Col. 6, Lines 24-29 and 39-43) “[T]echniques for mixing images of cameras along each path, such as, mosaicing and tweening” can be used to “effectuat[e] seamless motion along such paths.” Sorokin contemplates that the cameras have a “zoom capability” but zooming does not change the optical axis of a camera. Zooming merely narrows or expands the field of view along the same optical axis. Every image displayed by Sorokin is along the optical axis of a camera. Images from adjacent cameras may be combined by “mosaicing and tweening” to provide a smoother transition, but each image is still along the optical axis of a respective camera.

Applicant, by contrast, claims a method wherein “at least one of the synthetic images has an optical axis different than any of the plurality of cameras.” Sorokin is silent with respect to generating an off-axis synthetic image. This limitation is supported by at least Applicant’s FIG. 2, which illustrates “synthetic viewpoints” 13 and 15, neither of which is along an optical axis of camera 7, 8, or 9.

Claims 14-19, 30, and 31 depend from claim 13 and are allowable over Sorokin for at least the reasons stated above with respect to claim 13 and on their own merits. Therefore, the rejection of claims 14-19 should be withdrawn and claims 14-19, 30, and 31 should be allowed.

In view of the above, Applicants believe this application is in condition for allowance and respectfully request that it be passed to issue.

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Respectfully submitted,

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